

What Is Claimed Is:

1. A liquid crystal display module, comprising:

a liquid crystal panel including an upper substrate, a lower substrate, and a liquid crystal layer interposed between the upper and lower substrates;

a first frame on which a first printed circuit board and a second printed circuit board are formed; and

a second frame coupled with the first frame such that the liquid crystal panel is fixed between the first and second frames,

wherein the first printed circuit board is formed on the first frame and is electrically connected with the liquid crystal panel, the second printed circuit board is formed on the first frame and is electrically connected to the first printed circuit board to drive the liquid crystal panel, and the second printed circuit board being removable from the first printed circuit board and the first frame.

2. The liquid crystal display module according to claim 1, wherein the first frame has at least one first coupling segment and at least one second coupling segment to hold, respectively, a side and an opposite side of the second printed circuit board.

3. The liquid crystal display module according to claim 2, wherein at least one notch is formed at the side of the second printed circuit board.

4. The liquid crystal display module according to claim 3, wherein the second printed circuit board further has at least one notch at the opposite side thereof.

5. The liquid crystal display module according to claim 2, wherein each of the first and second coupling segments has the shape of a hook.

6. The liquid crystal display module according to claim 2, wherein each of the first and second coupling segments has the shape of a capsized letter “L”.

7. The liquid crystal display module according to claim 2, wherein a number of the first coupling segments and a number of the second coupling segments are the same.

8. The liquid crystal display module according to claim 7, wherein a first distance between two adjacent first coupling segments is smaller than a corresponding side length of the second printed circuit board, and wherein a second distance between the two adjacent second coupling segments is the same as the first distance.

9. The liquid crystal display module according to claim 1, further comprising a flexible printed circuit to electrically connect the first printed circuit board with the second printed circuit board.

10. The liquid crystal display module according to claim 9, wherein the flexible printed circuit is removable from the second printed circuit board.

11. The liquid crystal display module according to claim 1, wherein a tape carrier package electrically connects the first printed circuit board with the liquid crystal panel.

12. The liquid crystal display module according to claim 1, further comprising a back light unit having a lamp to produce light.

13. The liquid crystal display module according to claim 12, further comprising a lower cover to support the first frame to prevent wrinkling and bending of the first frame, the lower cover being coupled to the lower frame at a side of the lower frame where the lamp of the back light unit is disposed.

14. The liquid crystal display module according to claim 12, further comprising a lower cover to support the first frame to prevent wrinkling and bending of the first frame, the lower cover being coupled to the lower frame at a side opposite to the lower frame opposite the lamp of the back light unit.

15. A liquid crystal display device, comprising:

an upper substrate;

a lower substrate;

a liquid crystal layer interposed between the upper substrate and the lower substrate;

a backlight disposed one of the upper substrate and lower substrate; and

at least one printed circuit board,

wherein driving circuitry is disposed on the printed circuit board

16. The liquid crystal display device according to claim 15, wherein the at least one printed circuit board is divided into a source printed circuit board and a control printed circuit board

17. The liquid crystal display device according to claim 16, wherein the source printed circuit board and the control printed circuit board are electrically interconnected via a printed circuit and a connector.

18. The liquid crystal display device according to claim 17, wherein the printed circuit is flexible.

19. The liquid crystal display device according to claim 16, wherein the control printed circuit board includes a plurality of notches.

20. The liquid crystal display device according to claim 19, wherein the plurality of notches are disposed on opposing sides of the control printed circuit board.

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ABSTRACT OF THE DISCLOSURE

A liquid crystal display module includes a liquid crystal panel, a first frame, a second frame, a first printed circuit board, and a second printed circuit board. The liquid crystal panel has an upper substrate, a lower substrate, and a liquid crystal layer disposed between the upper and lower substrates. The first printed circuit board is electrically connected with the liquid crystal panel. The second printed circuit board is electrically connected with the first printed circuit board such that the second printed circuit board is removable from the first printed circuit board and is used for driving the liquid crystal panel. The first printed circuit board and the second printed circuit board are formed on the first frame, wherein the second printed circuit board is removable from the first frame. A second frame is coupled with the first frame with the liquid crystal panel fixed therebetween.

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